

Claims

What is claimed is:

1. An adaptive interconnect for providing an interface between multiple modules and a control system comprising:
  - a) a control system interface;
  - b) a plurality of module interfaces; and
  - c) adaptive interconnect logic associated with the control system interface and the plurality of module interfaces and adapted to:
    - i) negotiate with a module over a control path via one of the plurality of module interfaces to identify an interface personality for the module;
    - ii) select the interface personality based on negotiations with the module; and
    - iii) apply the interface personality to the one of the plurality of module interfaces.
2. The adaptive interconnect of claim 1 wherein different interface personalities can be implemented simultaneously among the plurality of module interfaces.
3. The adaptive interconnect of claim 1 wherein the adaptive interconnect logic is further adapted to renegotiate with the module over the control path if initial negotiations fail.
4. The adaptive interconnect of claim 3 wherein if the renegotiation fails, the adaptive interconnect logic is further adapted to send a notification of failure.
5. The adaptive interconnect of claims 1 wherein the adaptive interconnect logic is further adapted to:
  - a) receive a stimulus indicative of a change in personality for the module;

- b) renegotiate with the module over the control path via one of the plurality of module interfaces to identify a new interface personality for the module;
  - c) select the new interface personality based on the renegotiations with the module; and
  - d) apply the new interface personality to the one of the plurality of module interfaces.
- 6. The adaptive interconnect of claim 1 wherein negotiating, selecting and applying the interface personality are dynamic and occur automatically upon plugging the module into the one of the plurality of module interfaces.
- 7. A method for providing an interface between multiple modules and a control system comprising:
  - a) negotiating with a module over a control path via one of a plurality of module interfaces to identify an interface personality for the module;
  - b) selecting the interface personality based on negotiations with the module; and
  - c) applying the interface personality to the one of the plurality of module interfaces.
- 8. The method of claim 7 wherein different interface personalities can be implemented simultaneously among the plurality of module interfaces.
- 9. The method of claim 7 further comprising renegotiating with the module over the control path if initial negotiations fail.
- 10. The method of claim 9 wherein if the renegotiation fails, further comprising sending a notification of failure.
- 11. The method of claim 7 further comprising:

- a) receiving a stimulus indicative of a change in personality for the module;
  - b) renegotiating with the module over the control path via one of the plurality of module interfaces to identify a new interface personality for the module;
  - c) selecting the new interface personality based on the renegotiations with the module; and
  - d) applying the new interface personality to the one of the plurality of module interfaces.
12. The method of claim 7 wherein negotiating, selecting and applying the interface personality are dynamic and occur automatically upon plugging the module into the one of the plurality of module interfaces.